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ABSTRACT

This bulletin describes the major responsibilities of the FCC (Federal Communications Commission) Field Operation personnel regarding the administration and enforcement of communications regulations. Their duties include inspecting the compliance of radio stations, investigating unauthorized operation, monitoring radio transmission, examining and licensing, locating interference sources, reporting violations, and handling complaints. (SC)

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Federal Communications Commission Washington, D.C.

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GENERAL

The Federal Communications Commission is responsible for the administration and enforcement of regulations and treaties relating to radio communications.

Much of the work is carried out by the staff of the FCC Field Operations Bureau. This bureau has more than 400 employees, making up nearly one-fourth of all Commission personnel. Field engineers work out of 46 field offices and monitoring stations. They use 120 special mobile units to monitor, measure, identify, and locate all kinds of electromagnetic emissions, ranging from the very low frequencies up to the microwaves.

MAIN DUTIES

FCC Field Operations personnel have these main duties:

Inspection

They inspect non-Government radio stations of all types to determine compliance with technical standards of the Commission. This is to ensure maximum service to the station operator, industry and the public.

Investigation

They investigate illegal operations and activities and assist in prosecuting violators of the Communications Act and Commission rules.

Monitoring

FCC monitors patrol the radio spectrum around the clock to see that transmissions meet technical standards. The monitoring network detects unlicensed or nonconforming transmissions, traces and eliminates interference and also participates in public safety work. Under the National Search and Rescue Plan monitors furnish direction-finder "fixes" (positions) on aircraft and ships in distress.

Examining and Licensing

Radio operator examinations are conducted in the field. Authorizations are issued to those found qualified.

Engineering and Public Services

The field staff makes engineering studies for the Commission. It also carries out FCC public service at the grass-roots level by programs of education and assistance, often in cooperation with radio licensee associations and civic groups.

FCC field engineers are, in effect, guardians of all the radio channels, protecting the users of a valuable national resource. Field surveillance of radio transmissions ensures optimum orderly use of this resource. Stations are identified by call signs and are assigned specific channels or frequencies where their emissions travel. Any deviation may cause interference, resulting in economic injury, even loss of life in some cases. Unauthorized or erratic operation is quickly detected.

Any strange or wandering signal can disrupt traffic in the other paths. It can affect one or more of several million fixed, mobile, and portable transmitters throughout the country. Commission monitoring stations are on the lookout for such intrusions, and reports come both from the public and Commission monitors.

Locating Interference Sources

When an apparent violation is reported to an FCC office, Commission field establishments can listen in and determine the general area of its origin. Then field engineers go to work with mobile equipment to track down the offender. For searching out violators, special vehicles are equipped with direction finders, all-wave receivers, and antennas, carrying internal power sources. When it is necessary to observe a signal at close quarters over a period of time, the mobile receiver can be taken out of the car and connected to a power supply inside an office, hotel, house, or other place being used as a listening post.

Field engineers determine the type of emission, stations called, the frequency used, time and duration of the operation, the nature of communications made, and other distinguishing features to identify the station and the operator. For instance, if a transmission is sent by key, the characteristics of the operator's "fist" (sending technique) usually reveal whether he is a novice or a professional.

Several mobile or portable receivers can cover an area, or, if there is time, one direction-finder receiver can be used in taking bearings from several locations. This way it is possible to fix the general whereabouts of a transmitter. This is the same triangulation method used to determine the position of ships at sea and planes in the air.

Near the end of the hunt, an inspector uses a small detection apparatus that can be carried in the hand or in a trouser pocket, or fastened under his coat. He moves from door to door, and floor to floor if need be, to find where the signal is strongest. When that point is found, the sought-after transmitter is close at hand. Actual entry is made with the cooperation of local officials. The U. S. Marshal is there if an arrest is to be made.

PENALTIES FOR VIOLATIONS

The officials work under authority of the Communications Act, which prohibits unauthorized transmission. Courts have held that radio emissions know no boundaries. Consequently, operation of a transmitter anywhere in the United States requires Federal licensing of the station and, in most cases, the operator. Violators, if convicted, are liable to a maximum penalty of a $10,000 fine or two years' imprisonment, or both. (Exceptions from licensing are Government transmitters, certain low-power devices, and industrial, scientific, and medical equipment, where other limitations are imposed to prevent interference.)

The Commission appreciates that enthusiastic youth, in particular, can unwittingly violate the law. In such cases, a juvenile's parents are advised of the consequences of violation, that interference may blot out emergency communication of aviation, marine, fire and police radio stations. At the same time, the young offender is told how to qualify for licensed radio operation.

More serious cases are referred to U. S. Attorneys for prosecution. These involve persons who knowingly operate transmitters illegally or deliberately interfere with regular radio operation.

Radio stations are subject not only to interference from one another, but also from a variety of electronic devices that leak disturbing emissions. These include industrial heaters, garage-door openers, remote control units, arc welders, and electric signs.

HANDLING COMPLAINTS

The volume of interference complaints makes it impossible for the FCC's limited field staff to give personal attention to each case. Priority is given to those that endanger life and property-protecting services such as air and sea, police and fire communications. Priority also is given those involving illicit transmitters and unlicensed operators. FCC investigative engineers and monitoring personnel detect and locate harmful interference to all services with the same equipment used for apprehending illegal operators.

INDUSTRY COOPERATION

In its spectrum policing, the Commission receives cooperation not only from radio users but also from those who make and sell apparatus that can cause radio interference. Prototypes of certain equipment are tested or type-approved by the FCC in advance of manufacture to ensure that the equipment will not cause interference when put in operation.

TV INTERFERENCE COMMITTEES

TV, because of its dual technical nature, is more susceptible to interference than other forms of broadcast. Television Interference (TVI) Committees throughout the country are active in resolving video interference complaints.

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